REMARKS

The present application was filed on December 6, 2000 with claims 1 through 22. Claims 1 through 22 are presently pending in the above-identified patent application. Claims 1, 6, 7, 12, 13, 17, 21, and 22 are proposed to be amended herein.

In the Office Action, the Examiner objected to claim 12 due to an indicated informality and rejected claim 6 under 35 U.S.C. §112, second paragraph. The Examiner rejected claims 1, 3-5, 13, 15, 16, and 21 under 35 U.S.C. §102(e) as being anticipated by Gupta (United States Patent Number 6,212,565). The Examiner also rejected claims 2 and 14 under 35 U.S.C. §103(a) as being unpatentable over Gupta in view of Gampper et al. (United States Patent Number 6,442,601), rejected claims 7-11, 17-20, and 22 under 35 U.S.C. §103(a) as being unpatentable over Gupta in view of "Hierarchical Placement and Network Design Problems" by Guha (hereinafter Guha), and rejected claims 6 and 12 under 35 U.S.C. §103(a) as being unpatentable over Gupta and Guha in view of Smith et al. (United States Patent Number 6,341,311).

The present invention is directed to a method and apparatus for selecting a proxy server that stores a web resource from an array of proxies in a network. A disclosed proxy selector reduces the latency and bandwidth utilization required to obtain Web resources. A given proxy server is selected based on a proxy selection table generally maintained by each client. The proxy selection table redirects requests to a given proxy server in an array of proxy servers, based on the address of the requested resource and the recent history of client request patterns. The proxy selection table can encode the assignment of heavy file types and heavy domains to individual proxy servers. When a client requests a web resource, the proxy selection table is accessed to redirect the request to the appropriate proxy server. If the resource type is a heavy type, the request is redirected to one or more proxy servers responsible for heavy file types. If the resource is provided by a heavy domain, the request is redirected to the proxy server responsible for that domain. If the resource type is not a heavy type or provided by a heavy domain, a hash function is applied to only the domain part of the URL to identify a proxy server from which to obtain the desired resource.

The specification has been amended to correct a typographical error. No new matter has been introduced.

Formal Objections

Claim 12 was objected to because "P x (1-h)" should read -- P x (1/h) --.

Claim 12 has been amended to correct the typographical error. Applicants respectfully request that the objection to claim 12 be withdrawn.

Section 112 Rejections

Claim 6 was rejected because there is insufficient antecedent basis for the limitation "the traffic load" in line 3.

Claim 6 has been amended to provide for the proper antecedent basis for the cited limitation. Applicants respectfully request that the rejection of claim 6 be withdrawn.

Independent Claims 1, 7, 13, 17, 21 and 22

Independent claims 1, 13, and 21 were rejected under 35 U.S.C. §102(e) as being anticipated by Gupta and independent claims 7, 17, and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gupta in view of Guha.

Regarding claims 1, 13, and 21, the Examiner asserts that Gupta teaches determining if said resource (fig. 3, item 306) is a predefined file type (type of file belonging to a predefined domain in the proxy table, col. 8, lines 2-34). Applicants note that Gupta teaches to truncate the address of the requested page to remove from the address the portion of the address attributable to one or more nested pages (essentially, leaving only the domain). Col. 8, lines 21-24. The truncated address is then hashed to yield an index value for the proxy table in order to select a proxy server. Thus, *the proxy server is selected independent of the file type*, which was removed during the truncation step. Independent claims 1, 13, and 21, as amended, require redirecting "said web resource request to a proxy server associated with said file type." A "file type" is a term well understood to those skilled in the art and clearly distinguishes over a "domain" which merely identifies a source of the file. With the present invention, the domain is used as a "fallback" technique only when the novel methods do not apply. See discussion above at page 7, lines 24-26.

Thus, Gupta does not disclose or suggest redirecting said web resource request to a proxy server associated with said file type, as required by independent claims 1, 13, and 21, as amended.

Regarding claims 7, 17, and 22, the Examiner acknowledges that Gupta does not

show selection of a proxy server according to traffic volume, but asserts that this feature is well known and would have been an obvious modification to the system shown by Gupta as evidenced by Guha. The Examiner further asserts that Guha shows "a system for hierarchical caching, where the caches are placed in layers and each layer satisfies a fixed percentage of demand." Applicants note that, although Guha teaches that each layer satisfies a fixed percentage of demand, the goal is to determine which facilities are to be opened and to allocate the demands to the open facilities, i.e. the algorithm is executed prior to the establishment of the "network G." Guha does not disclose or suggest that the algorithm is utilized after the network G is established. Independent claims 7, 17, and 22, as amended, require *determining if said web resource request* is served by a domain having a traffic volume that exceeds a predefined threshold; and redirecting said web resource request to a proxy server associated with said domain. Thus, the allocation of load is performed *following a request for service*, i.e., after the system is established.

Thus, Gupta does not disclose or suggest determining if said web resource request is served by a domain having a traffic volume that exceeds a predefined threshold; and redirecting said web resource request to a proxy server associated with said domain, as required by independent claims 7, 17, and 22, as amended.

Additional Cited References

Gampper et al. was also cited by the Examiner for disclosing a proxy cache system for saving files of predetermined minimum size and greater into secondary storage in the cache (col. 6, lines 31-59). Gampper et al. is directed to a system, method, and program for caching files retrieved from a server over a network. Gampper does not address the issue of redirecting web requests to proxy servers.

Thus, Gampper et al. do not disclose or suggest redirecting said web resource request to a proxy server associated with said file type, as required by independent claims 1, 13, and 21, as amended, and do not disclose or suggest determining if said web resource request is served by a domain having a traffic volume that exceeds a predefined threshold; and redirecting said web resource request to a proxy server associated with said domain, as required by independent claims 7, 17, and 22, as amended.

Smith was also cited by the Examiner for disclosing the access requests in a

distributed cache and the addition of a new proxy server into the network (fig. 11; col. 18, lines 49-53). Smith does not address the issue of considering file type when redirecting web requests to a proxy server. In addition, although Smith considers load factor to assign some proxy servers proportionately more URL data objects, the load factor is "incorporated in the creation of the combined hash values" (col. 5, lines 25-28) and is thus performed *prior to receiving the web resource request.*

Thus, Smith does not disclose or suggest redirecting said web resource request to a proxy server associated with said file type, as required by independent claims 1, 13, and 21, as amended, and does not disclose or suggest determining if said web resource request is served by a domain having a traffic volume that exceeds a predefined threshold; and redirecting said web resource request to a proxy server associated with said domain, as required by independent claims 7, 17, and 22, as amended.

Dependent Claims 2-6, 8-12, 14-16 and 18-20

Dependent claims 3-5, 15, and 16 were rejected under 35 U.S.C. §102(e) as being anticipated by Gupta, claims 2 and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gupta in view of Gampper et al., claims 8-11, and 18-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gupta in view of Guha, and claims 6 and 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gupta and Guha in view of Smith.

Claims 2-6, 8-12, 14-16 and 18-20 are dependent on claims 1, 7, 13, and 17, respectively, and are therefore patentably distinguished over Guper, Gampper et al., Guha, and Smith et al. (alone or in any combination) because of their dependency from amended independent claims 1, 7, 13, and 17 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,

Date: February 23, 2004

Kevin M. Mason
Attorney for Applicant(s)
Reg. No. 36,597
Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06824
(203) 255-6560